A

NEW DISCOVERY

OF

An Excellent Method

OF

Bee-Houses & Colonies,

TO FREE

The Owners from the great charge and trouble that attends the Swarming of Bees, and delivers the Bees from the evil reward of Ruine for the benefit they brought their Masters; advantaging their Owners many-fold above what-ever any Method heretofore practic'd doth.

Experienced seven years by *John Geddo*, Gent. Inventor; and approved by the Royal Society at *Gresham-Colledge*.

London, Printed for the Author, and sold by *D. Newman* at the *Kings Armes* in the *Poultrey*; and *Ship* and *Anchor* at the *Bridg-foot* on *Southwark*-side, 1675.

Advertiſement.

THat his Majeſty hath given & granted by Letters Patents under the great Seal of England, to John Gedde and his Partners, the full and ſole Power, Priviledge, and Authority of uſing, practicing, exerciſing and enjoying the new Art and Invention for the Improvement of Bees, during the ſpace of 14 years, according to the Statute made in that behalf: Barring and excluding all others whatſoever from Making, Uſing, Practiſing, Counterfeiting, Imitating, or Reſembling the ſame, without the ſpecial Licence and conſent of the ſaid John Gedde and his Partners, firſt had and obtain'd, under the Penalties by the ſaid Statute in like caſe provided.

Introduction.

THe Honey-Bee is known by long experience to be such an Industrious and profitable Creature, that it has been ever accounted a delightful and profitable labour to provide for its preservation, by providing it a House to live and work in, and Food in Winter and other bad seasons, when through distress it cannot provide for it self.

Meliſſus King of *Crete*, is reported to be the first that invented and taught the use of Hives, and of Honey, which is become so profitable for the health of man.

Gulielmus a Conchis writes, that in his time, a Consul of *Rome* was so much delighted with this

excellent Creature, that he caused Hives of Tinn-horn to be erected in his Gardens, that through the horn he might observe their work.

History affords many more instances of honourable persons in all ages, who have delighted in this care of Bees: Yea, many at this time in *Poland*, and other Kingdoms, make good Revenues by the profitable improvement of Bee-keeping; and it is certain, that if Apifactories were encouraged, a Kingdom might be considerably advantag'd thereby.

But the former forms of Hives, are subject to so many inconveniences, charge, trouble, and casualties, that men have been much discourag'd from the pleasant and profitable improvement of Bee-keeping; this many have discover'd and complain'd of: And

I have found it by experience, wherefore it animated me to essay if by a new form of Hives these Inconveniences might be redressed or prevented. So after I had try'd several forms, I at last found one which answered my expectation, which is the same that I publish in this little Tract.

After I had communicated in general my experience to several persons of quality, they judged the invention commodious, and better then they any way yet devised; and they desir'd me to publish it, which I was unwilling to do, until by further experience I had found the great advantage and conveniency of the same.

But while I was thinking only of communicating this Invention to my Friends and Acquaintance, I was advertised by an Ingenious Gentleman, that

the Illuſtrious Royal Society at *Greſham-College* (thoſe great Encouragers and Promoters of Learning, and Honourers of Invention) had in a Tranſaction (*Numb. 96. July* 21. 1673.) given a deſcription of one of my Boxes (which they had gotten from Sr. *Robert Murray*, and he from Sir *William Thomſon*, who had got it from me, together with a written Deſcription of its parts and uſe, not intended for publication, but for private ſatisfaction only:) And that they had approved of the ſame as the beſt form of Hives yet invented.

This encouraged me to the publication of the Houſe and Hives together; for (I ſuppoſed) if that Illuſtrious Society eſteem'd ſo much of a lame and defective repreſentation of a part, then would they much more eſteem the whole Inven-

vention, when certified of the long experience of the commodiousnes and conveniency thereof.

The subject-matter then of the Tract, is the description of the Hives and Houses, together with their use advantage & excellency beyond any other forms of Hives yet invented; which I intend to treat of with all possible brevity & perspicuity: But first I would propose the following Hypotheses or fundamental truths, upon which, as upon a base, the whole Structure of the ensuing discourse is founded; and they are these:

1. It is natural for all Bees to begin at the top, and to work downwards.

2. That Bees swarm for want of room.

3. That a great hinderance of their labour is confusion about Swarming, and mispending their time in Luxury. 4. That

4. That Idleneſs, cauſes Luxury, and extravagant and unprofitable increaſe of Bees, which being by this commodious method of labour and induſtry prevented, the uſual, but unkind requital of ſmothering and drowning is likewiſe avoyded.

5, That the great charge and trouble attending upon Swarming of Bees does diſcourage the Owner and conſume his profit.

THE.

The Deſcription of the Boxes, or Hives.

THE Boxes may be made of *Wainſcot*, or *Firr-Deals*, or of the ſame materials that the *London*-Pales, for carrying water, or as your Buſhel or Peck-meaſure in the Country. Dimenſion.

For their Dimenſion, it is fit that each Box be of that largeneſs, that it may contain a Buſhel, the height not exceeding 12 Inches, and its breadth one third more than the heighth; that ſo they may the more conveniently ſtand

ſtand upon one another; and that when the Bees come in Loaden, they may not have a great height to go up.

The Box is in figure an *Octagon*, or eight ſquare, or round, each ſide 9 inches in breadth; it is covered cloſe at the top, having a ſquare hole in the middle 4. inches long and broad, with a *Figure.* ſhutter that ſlides to and fro in a Groove, about half an inch longer than the hole. It has 4. Win- *Parts.* dows, each in figure a *Rhombus*, or like an ordinary pain of glaſs, oppoſite to one another, and in them pains of glaſs, ſhutters to cover them. The Door for the Bees is divided into 6. holes, half an inch wide, and an inch in height, for the better helping the Bees to carry out their dead; each of theſe holes has a ſhutter, that ſlides up and down in a Groove, to cover leſs or more as the

the ſeaſon requires, or as occaſion offers. Each Box has two Iron handles, with joynts to be placed about the middle of the Box on the ſides thereof, for lifting the ſame up, to ſet another under it, or for tranſporting the ſame for uſe, when the Bees have wrought down to the lower Box. At the top of the Box there is a creaſe or rebbit all round it, about half an inch in depth on the outſide, and an inch in height, and another in the inſide at the bottom, which ſerves to fix them, when ſet upon one another. Each Box has alſo a hole at the bottom upon the ſide, that ſhuts with a ſliding cover; this is to be open'd and us'd (when the Boxes are placed upon one another, and the uppermoſt is full of Honey, and all the Bees are wrought down to the lower Box) for ſhutting the ſquare hole in the top of the lower

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er Box, that its cover may divide and cut the work, in the upper Box from the work in the lower; And for this end, it is fit that the ſquare end of that ſliding ſhutter be covered with Lattin or Iron well ſharpned, that it may cut the work the better.

Within each Box there is a ſquare frame made of four poſts joynted together, by 12. ſmall ſticks, and 6. other croſſing theſe, and one ſtanding perpendicular in the middle of the frame, the frame conſiſting of the 4. poſts, and 19 ſmall ſticks; this frame is to be put within the Box, and faſtned to 4. ſides thereof by 8. ſcrews, two in each poſt; upon this frame are the Bees to faſten their work, and this is very convenient, for when you have removed a Box full of work, unſcrew the frame, and then you may take out all the work without

out breaking the Box frame or work, and then you may with pleasure behold the excellent Fabrick, which these industrious Insects have ingeniously fram'd.

The use of the pains of glass, is not only for pleasure, to behold the work and labour of the Bees; but also to know their strength, idleness, fulness, or want of room, that so you may inlarge or remove them as you please. And whereas some may think that the work of the Bees will darken the glass; I declare that I have found the contrary by experience.

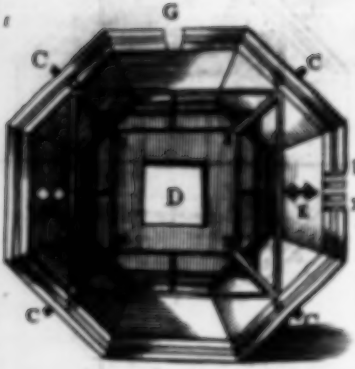
A description of the several Figures of a single Box, its frame, and of a Colony, or three Boxes plac'd on the top of one another.

Fig. 1. Represents a Box projected, lying on its side, with its open end to the eye where the frame is projected, *&c.*

B B B B B B B B B The Box.
C C C C C The ſcrew pinns.
E O The Windows.
F X The doors for the Bees to go in and out at.
G The place by which the cover of the hole in the top is ſhut.
H H The inner rebbit, or creaſe at the bottome.

Fig. 2. Repreſents a Box ſtanding upright.

H The Bee-hive ſet upright.
B The ſquare hole through which the Bees work down,
X The ſhutter that covers the hole upon occaſion.
D The piece of Wood that fills up the Groove in the Box that is upmoſt.
E X The doors for the Bees.
F N Two ſliding ſhutters that ſlide down, each covering three holes.
G H The windows with pains of glaſs in them.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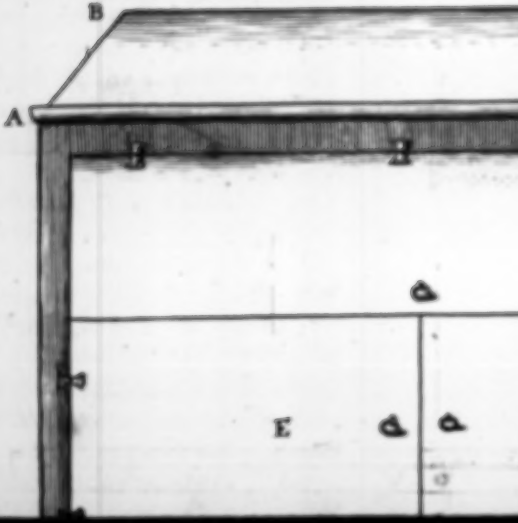
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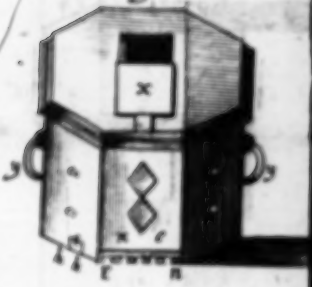

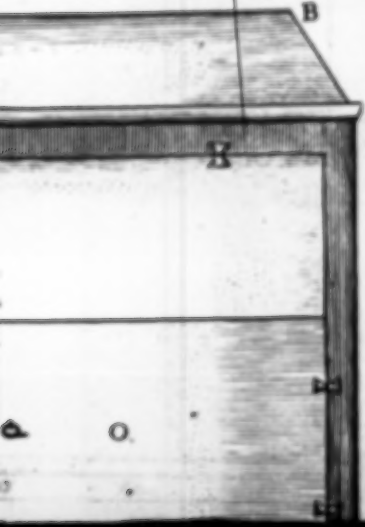

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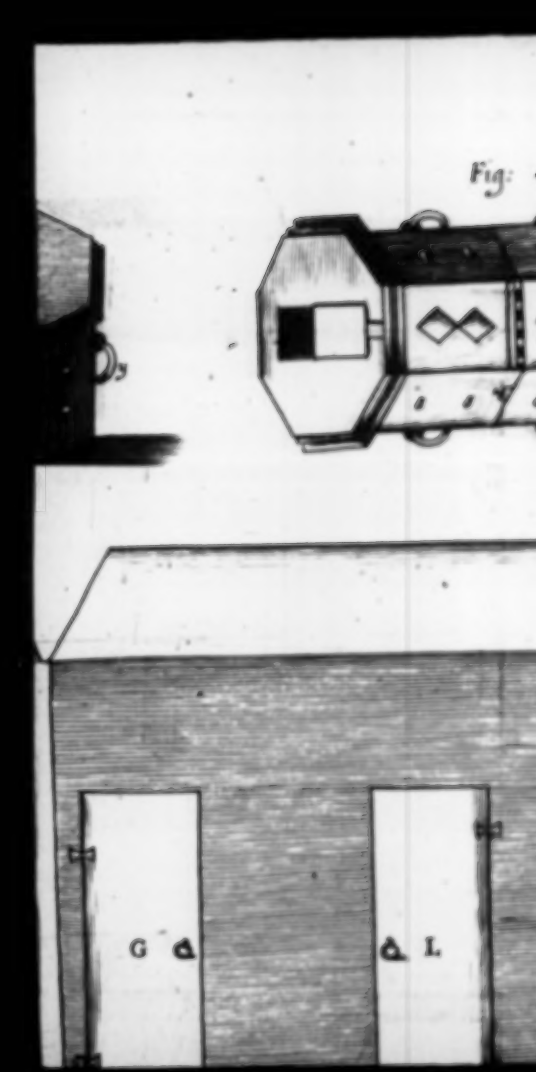

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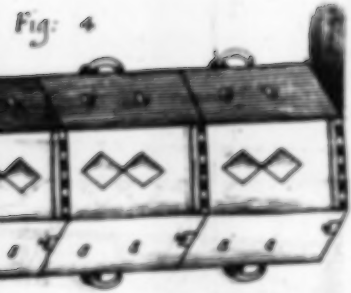

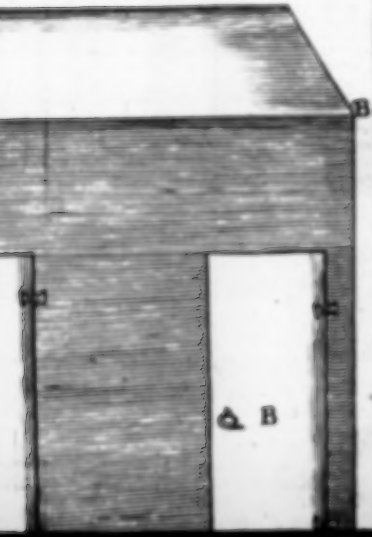

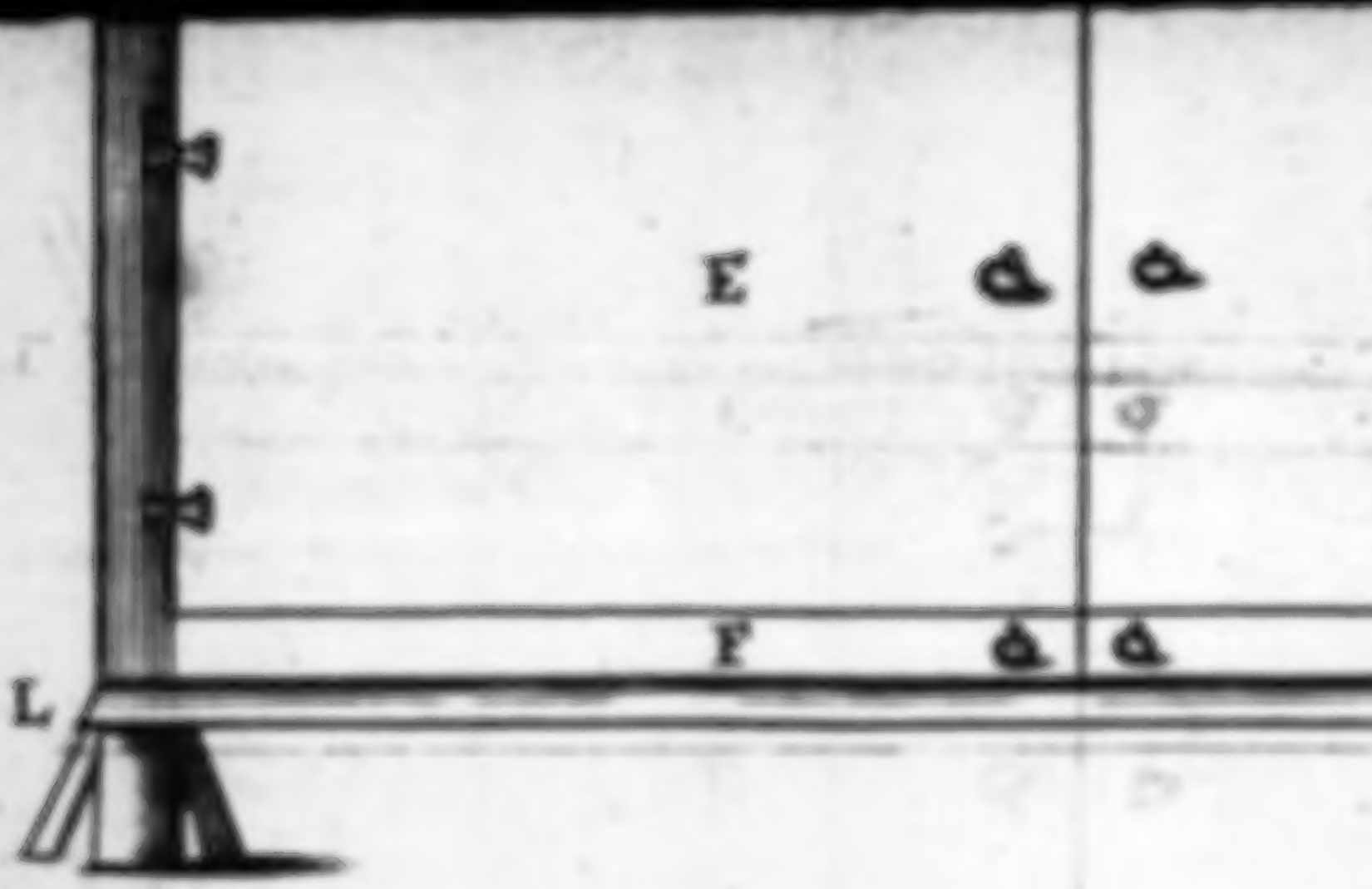
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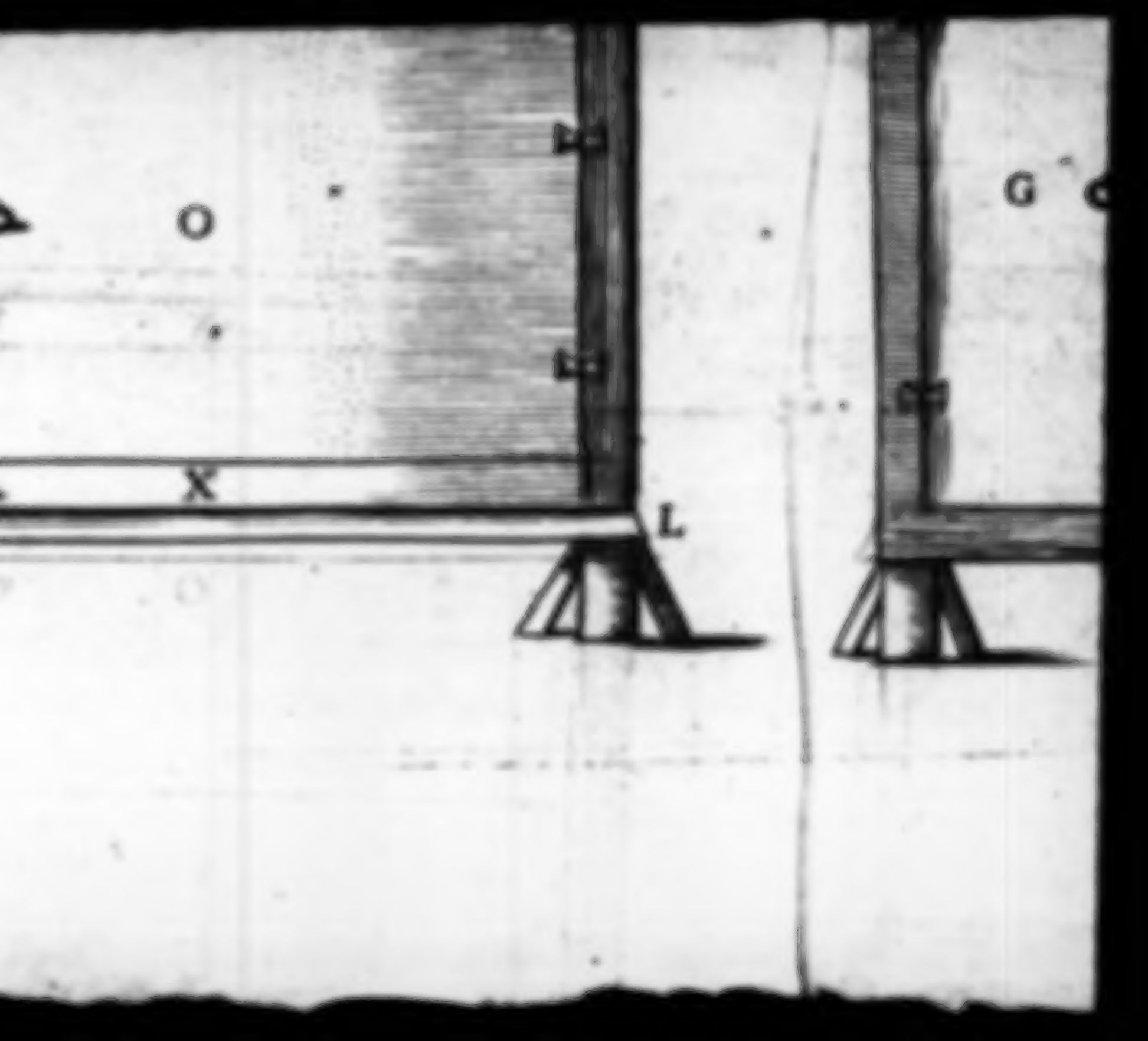
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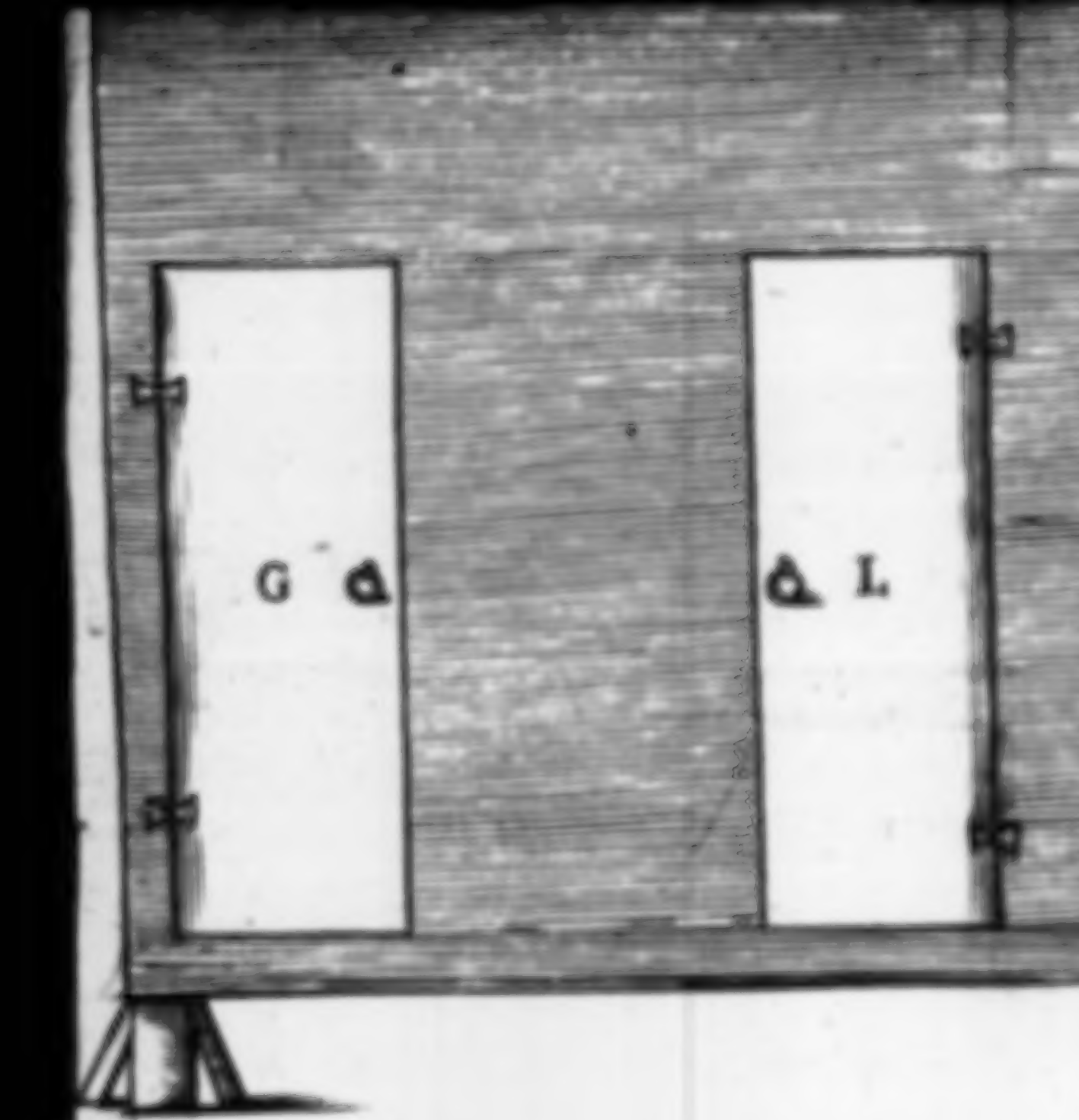
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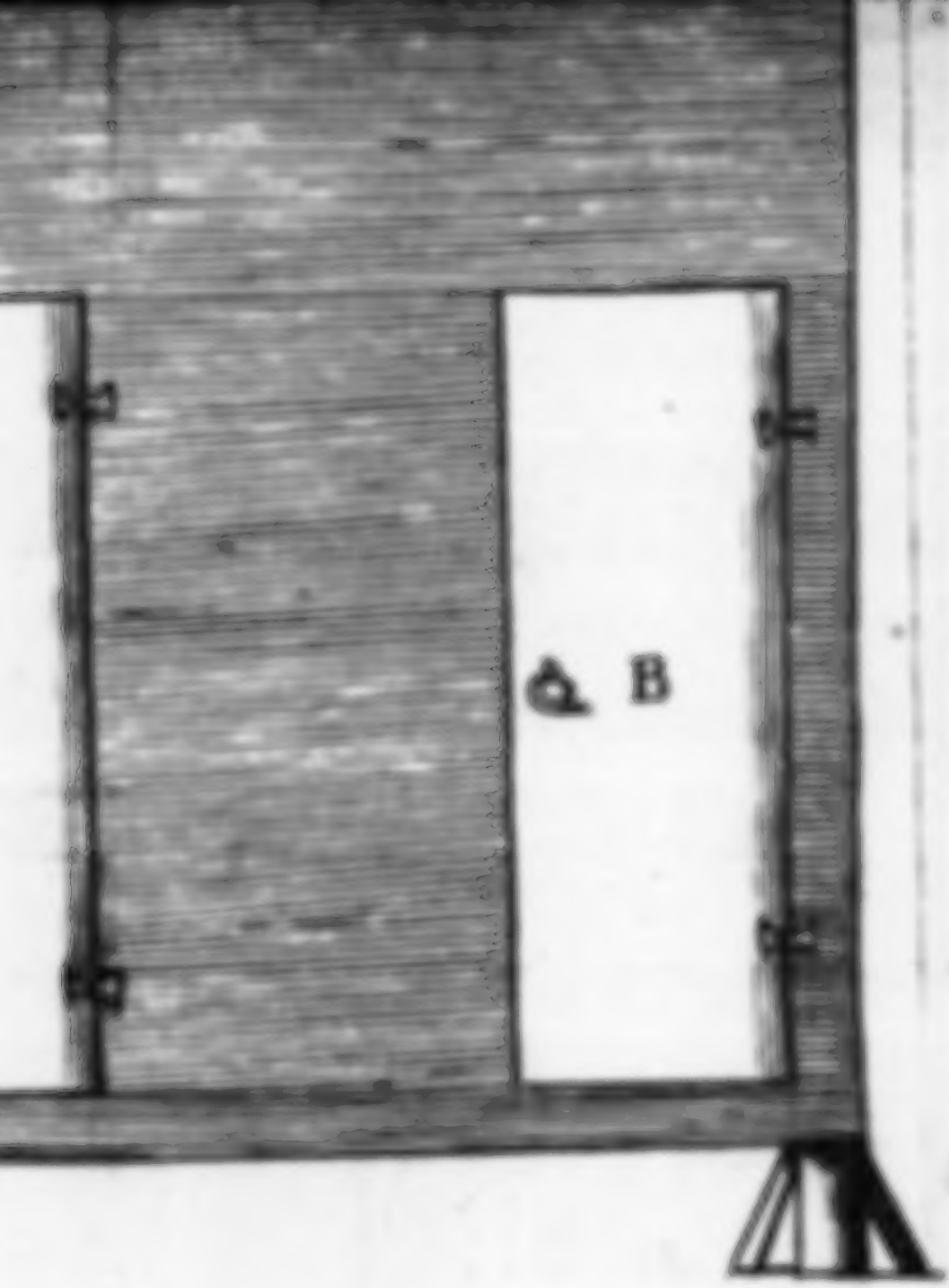
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Y, The handles for lifting the Box when full.

I, The rebbit or creaſe a top for faſtning Boxes upon one another.

K, The pegs that faſten Boxes together.

Fig. 3. Repreſents the frame.

A, The frame for the Bees to faſten their work on.

B, The nuts for the ſcrew nails faſtned in the 4. poſts or pillars upon which the whole frame hangs, and to which 12. ſticks are faſtned.

C, The 6. croſs ſticks that croſs the reſt.

B The perpendicular ſtick in the middle, by which aſcend and deſcend, betwixt the Boxes.

Fig. 4 Repreſents a Colony, or 3. Boxes ſtanding a top one another, it needs no deſcription; for it is nothing elſe but 3. Boxes plac'd a top one another.

The Description of the Bee-House.

THe House may be made either of wood, bricks, or stone, &c. And covered either with Lead, Tile, or &c, yet what ever it be cover'd with, it must be seil'd closely with good well seasoned wood, and so smooth as no Vermine may have access or place to lodge in; also the bottom must be lin'd with boards well joyn'd together, it will be convenient that it be two foot high above the ground, and stretch'd half a foot without the door, that it may be convenient for the Bees to rest upon, before they enter the House, and when they come forth

forth to view the weather, or to lye and sun themselves in a fair day; this extension of the floor will serve also for preserving the floor from Vermine, that none creep up the wall of the House, or enter.

A L The height of the wall of the House, which is two yards from the floor to the lower part of the Roof.

B Two arising above the side-wall.

C The forepart of the House, it must be covered, so as at convenient times it may be all laid open to the view of the Sun, whereof it must have

D first, A long and broad door hanging down upon Iron hinges to fold up, and so fastned by an Iron. The breadth of this door must be half the height of the wall of the house, and it is

ſo long as betwixt one corner of the houſe and the other.

E, O, two doors faſtned with Iron hinges ſide-ways, joyning in two creaſes made in them, as two opening doors are commonly made to joyn; they are of equal breadth and length.

F, X, two narrow doors, each in length equal to the proceeding; but far leſs in breadth; theſe open ſide-wayes, and ſhut in a rebbit, or creaſe made, as in the former doors: theſe doors are open all the Summer, and ſhut all the Winter. The reaſon why the doors are thus faſhion'd and faſtned, is: Firſt, The great door hanging downward, is only to be lifted up, and open'd once or twice in the year, at moſt, when you are to remove any Boxes for taking your Honey, or when you are to add a Box more then are all open'd. The other two doors

next to it, are opened upon like occasion, or oftner, as the Bee-Master pleases, when for pleasure he desires to view their work; for they give light to the glass windows; so that when he looks through the doors in the back of the House, then the glasses receiving light, at the other side will shew the work the better. But observe, this must not be done in the heat of the day; also, the upper folding door is kept shut at those times to keep off the rayes of the Sun from the Boxes and the Bees.

In the figure of the back of the House, G L B represents the 3. doors therein opposite to the 3. Colonies plac'd within the house; if you place more Collonies, you may make more doors.

Y Z & R, represents that part of the floor of the house, that below the two lowest doors in

the front of the house, is protracted some 3. or 4. inches.

Each pillar of the house must be protracted 1 half foot below the floor, for feet for the house to stand on, and to keep out Vermine.

Your house must be furnished with good Locks, Hinges, and other things thereto belonging.

Also you must make a spout of Lead, to convey the water that drops off the Roof, to the corner of the house, that it may fall there, & not upon the part of the floor in the front of the house, upon which the Bees rest themselves, when going out or coming in, lest it should kill any Bees.

The house may be made Nine foot long, and a yard in breadth within from side to side.

As for the height of the Roof above the walls, it may be made flat,

or

or of any convenient length, as the Bee-master pleases.

And thus we have described the House, next of its Scituation.

Of the convenient scituation of your Bee-Houses.

HAving describ'd the Boxes and House, it will be fit in the next place to advise you how to scituate your House with greatest conveniency for the warmness, quiet, and conveniency of flying abroad, and returning home of your Bees.

First: Of all your Gardens, Commons, and Inclosures, that which you would bestow most pains upon, in Planting and Hedging, is the fittest place for building of your Bee-House in,

for Bees get their most Profitable Food of Trees.

Secondly: Take care you be well guarded from the North-wind, or cold storms, and see that the House be sencible against all their Enemies and yours.

Thirdly: Place your House in the most Valley-ground, that the ascent may be when they go abroad, and the descent when they return home laden with work.

Fourthly: Build not your House directly East and West, but a point or two from the South-east, to the North-West, because the Bees come not forth in the Morning before the Sun is risen, and they continue after the Sun is set, at work and exercise, if the Night be fair and calm, whereby several days some hours are gain'd to their advantage.

Fifthly: Beware that you o-

ver-

ver-lay not your ground with too many Colonies, for there will be more profit of a few Colonies well nouriſh'd, then of many in over-laid ground: Wherefore, build your Houſe according to your ground.

Sixthly: It well be worth the expence and pains of any Bee-Maſter to plant ſuch Trees in his ground, as conduce moſt for the food and nouriſhment of Bees, as the Oak, Palm-tree, and Elm, *&c.* Alſo, it will be convenient that he plant his Gardens with Time, Balm, *&c.*

Seventhly: If the Houſe be built near Meadows, where Cattel feed, it will conduce for their thriving, for it is obſerv'd that Cattel thrives beſt where there are moſt Bees.

How the House is to be furnished with Colonies; how the Boxes are to be placed, and the Bees transplanted into them.

YOur House being built in a convenient place, you must next know to repleniſh it; and for that end, the fitteſt time of the year muſt be obſerved, which is the beginning of Summer, when Bees are at the Swarming, and looking out for a new Lodging, then is the fitteſt time to tranſplant them from the old Hives to this new form of Hives, which you may thus effect.

Firſt, take one of your Boxes, and rub it, and dreſs it with ſuch things,

things, and after the same manner as you use to do your old Hives when a Swarm is to be put into them. Then open the square hole in the top of your Box, and place your Box in the middle or center of the Bee-house, in respect of the length; and as to the breadth of the House, within an inch of the door of the House, place that front where the little holes are, by which the Bees goe in and out. Then a well-filled old Stock, or a well-furnish'd new Swarm in the old form of Straw-Hives, and taking care first to mark that side of it that is the usual passage of the Bees in and out, place it upon the top of the aforesaid box, with its front to the front of the box; then having clay ready prepar'd, plaister it round on the edge of the old Hive, so as to stop all passages from the Bees coming out any other

ther way but through the box; and if it happen that the old Hive be broader then the top of the box you are to place it on, then take a thin board made broad, with a hole cut in it even with the hole of the box, and so put the Hive on it, being between the Hive and box; let all the Windows of the box be kept shut, except at such times as you have occasion to look at them towards Evening, or in a Morning, to see how they go forward with their work.

Also, let all the doors of the House be kept shut but upon like occasion, except the small ledge at the bottom, which must be always open, save in the Winter.

When you find that first box full of Work and Bees, except it be very late in the year, take another box of the Collony, and having

having prepar'd it as the former, lift up the first box, with the Hive upon it, by a Pulley fastned to the top of the house, or by hands, and put the second box in the place of the first, under the first box and Hive, having persons ready upon the lifting up of the box and Hive, with their hands to direct it so as they may fall in the creases or rebbits; and so leave the Bees to work down into the second box, till they have filled it also, which is not to be expected the first Summer except the Summer be very advantageous. Then at the usual time of the year, for taking of Bees, take off the old Hive for use, which will be filled with work, but no Bees, for they will be working in the lowest box. This transplantation of the Bees, is only used the first time that you build your house and erect your Colonies.

How to remove your Honey seasonably.

FOr the commodious removal of the Honey, you must observe, that although there be three boxes in one Colony, yet you must know by your glasses, that there be two of them full of work, and the body of the Bees working in the lowest box. Likewise special respect must be had to the season of the year, that plenty may be left to the Bees; also see that season be good, the situation good, and the house and boxes well ordered, there is no doubt but two boxes may be taken off of one Colony, being once well stockt with Bees, the boxes are to be taken off in this

this manner. First open the little door on the side of the upper box, and shut the hole of the lower box top, then having well consider'd of their strength, take off the upper box, then unscrew the pinns of the side, and let out the inner Frame with the whole Fabrick, in which there will be no Bees; and out of it you may take what may be well spar'd of Honey and Wax, then may you screw in the Frame into its place again; then opening the Passage between the Hives, the hole in the top of the lower box, then put on again the box you took off in the place it was, for to be a relief to the Bees, in case the lowest hold not out to be Provision enough for the Winter. And so let it always be Circulated as soon as the lowest box is full of Bees; and the provision made, you may even in Summer-time take off

the

the upper box of Honey, and put in an empty Box under the lowest.

A Remedy, in case of absurdity committed by the Inspectors of the Bees.

WHen through the indiscretion or mistake of the Bee-masters, by reason of an ill season, too small a quantity of provision shall be left, then feeding may be necessary. The best expedient is to put a Box with suitable provision under them. There are several sorts of provisions used by Bee-masters, as Honey, boyld Wort, Bean meal mix'd with Honey, and many other expedients which we refer persons to, according to the conditions of their Family and the Countrey. In

In case there be no small springs, brooks, or rivulets wherein there are pebble-stones a little surmounting the surface of the water, then set troughs of water with little chips swiming in them for the Bees to light on, and take the advantage of the water without hazard.

Of the Excellency of the New Method above the old.

THe Excellency of this New Method above the Old, will most clearly appear by comparing them together, by showing the inconveniencies of the old, and the conveniencies of the new, for it is an approv'd axiom that *Contraria juxta se posita magis elucescunt.* First then

I will propose the inconveniencies of the old method:

1. The charge of keeping a person all the three moneths of Hay and Corn Harvest, to attend them.

2. The trouble of preserving them in their Swarming from going away and getting them into their boxes.

3. From the loss of time in the confusion that they are in before they Swarm, for three weeks or a month, and their unsettlement for a week afterwards, which takes up one third of their time.

4. The mispending of their time in Idleness and Luxury, wherein they only beget a numerous brood of Beggars that dye in the Winter, instead of employing all that time in a channel of profitable labour for their Owners, which with the former loss makes two thirds of their time.

5. The

5. The destroying of the most industrious part of the Bees by smothering or drowning, which is an ill reward of the industry of so good Servants, and a great loss to the Owners of them.

6. The Inconveniency of being exposed to Cattel, Vermine, and excessive heats and colds, with many other Casualties.

Secondly: *I will propose the Conveniencies or advantages of this New way.*

1. In this New way there is no charge of keeping a Person to attend them, only their Recreation in having inspection into them, how they goe forward in their work, and having no occasion to Swarm.

2. In this way they Hive themselves by an additional box.

3. By their additional box which preserves them from

ſwarming, idleneſs and luxury; there is two thirds of their time gain'd for their Owners profit.

4. All the vigorous Bees are preſerv'd alive, to repeat their induſtry for their Maſters advantage.

5. By the commodiouſneſs of your houſe, which is cloſe and ſtrong, and the conveniency of your Boxes which are alſo cloſe, you have ſafety and preſervation to your Bees.

6. By reaſon of your glaſs lights, you are alwayes able to make a judgment of the ſtate of your Bees.

Now conſidering the charge, trouble, loſs and hazard in the old method, that eats up the profit, and diſcourages the Owners. This new method that frees from all theſe inconveniencies of charge, loſs, &c. muſt of neceſſity by any judicious perſon be pre-

preſer'd for the good of the Commonwealth, and of every Bee-maſter.

Further, The profit of 3. Collonies may be ſuppoſed in a ſeaſonable year to accrew to the Owner, the value of 14 or 15 pound *per annum* when ſetled, and that without any charge or trouble; whereas the old method, with as many Bees as theſe 3 Collonies are ſtockt with, will not amount to above 3 or 4 pound *per annum* in Honey and Wax, from which is to be deducted the charge of a perſon for 3. months in Hay and Corn harveſt, which can't be worth leſs than 40 ſhillings, beſides trouble and hazard, *&c.*

Several objections Anſwered.

1. *Object.* Some may object, that this new method is only a project that has never been practis'd

&is'd or experimented, and consequently not fit for a wise man to disburse a sum of money upon. I answer, That the Rationale of the proposal, with the present certificate of several substantial persons living near the place where this hath been practised and experimented with success full Seven years together, with an express account thereof given in the printed Transaction (*Numb. 96. July* 21. 1673.) Of the Illustrious Royal Society at *Gresham*-Colledge, is enough to encourage any ingenious person to run so small a hazard, for so great an advantage.

2. *Object.* If then this experiment of so great an advantage, has been known for several years by many persons, how comes it to pass that it han't been practis'd also by many persons? Answer, That person that manag'd it, has not been so free to accommodate per-

persons with the perfect measures & secrets of it, although it has been often and earnestly desired of him by persons of Quality.

3. *Object.* Seeing the Bees are still preserv'd from destruction, then we find by calculation, they'l increase to so great a number and swarm, as the Colony won't be able to contain them. Answer, If the Honey be seasonably taken from them, so as Room be left to work in, they'l be more industrious, and less luxurious, so that experience will teach you, that they increase in number only, because of idleness and heat, for these make them luxurious.

4. *Object.* That you depriving them of their Honey, and not destroying them, keeps them only alive to be starv'd in Winter.

Answer. It being clear from the premises, that they have redeem'd ⅓ of their time, and consequent-

sequently made ⅓ of provision more in that time, the Owners may as safely take away ⅓ of their Honey, upon a right judgment made by inspection through the glass, and leaving but one third, as they that leave a stock full of Bees and Honey.

5. *Objct.* That the charge of 5. or 6. pound in setting them up at first, does bring a present inconveniency upon the Owner.

Answer, The ample and sudden aforementioned advance of his profit and freedom from the continued charge of old Bee-Hives, does abundantly overballance that present inconveniency or charge.

FINIS.

ERRATA.

IN the introduction, *page* 2. *line* 2. *read* thin: *p.* 9. *l.* 12. *r.* two Gavels: *line* 19. *r.* first D. *line* 22. *r.* Iron hinge: *l.* 29. *r.* one third. *p.* 10. *l.* 23. *r.* they all *p.* 11. *dele* and *p.* 12. *l.* 4. *r.* a foot and a half: *p.* 16. *l.* 8 how to: *p.* 17. *l.* 15. *r.* take a *p.* 20. *l.* 14. *r.* the season.